

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus comprising:

a receiver configured to receive a multi-carrier transmission, wherein the multi-carrier transmission comprises various symbols, each symbol comprising a plurality of carriers,

an accessor configured to access at least one symbol which is adapted to establish a distinguishable power based pattern for pilot carriers in the at least one symbol,

a block configured to establish power accumulation sums for possible pilot carriers of the at least one symbol based on the pattern, and

a block configured to determine a power accumulation sum maximum of the sums indicating a pilot carrier position.

2. (Currently Amended) An apparatus according to claim 1, wherein one of the possible pilot carriers is configured to comprise the a maximum in accordance with the predetermined pattern for the pilot carriers within the symbol.

3. (Previously Presented) An apparatus according to claim 1, wherein the position of the possible pilot carriers is configured to be based on the pattern in such a way that carrier indexes having a pilot in a matrix of certain number of symbols are configured to be selected, and the corresponding carrier index position within the accessed symbol is accordingly configured to be selected.

4. (Currently Amended) An apparatus according to claim 1, wherein every predetermined carrier of the a symbol is configured to be selected for the block configured to establish the power accumulation sums.

5. (Currently Amended) An apparatus according to claim 4, wherein every fourth carrier of the a symbol is configured to be selected for the block configured to establish the power accumulation sums.

6. (Previously Presented) An apparatus according to claim 1, wherein the distinguishable power based pattern comprises boosted pilot carriers compared to data carriers of the symbol.

7. (Previously Presented) An apparatus according to claim 6, wherein the pilots are boosted in amplitude of 4/3 compared to the data carriers.

8. (Currently Amended) An apparatus according to claim 1, wherein the block configured to establish power accumulation sums further comprises:

a block configured to perform a first power accumulation sum for first possible pilot carrier positions of the symbol,

a block configured to perform a second power accumulation sum for second possible pilot carrier positions of the symbol,

a block configured to perform a third power accumulation sum for third possible pilot carrier positions of the symbol,

a block configured to perform a fourth power accumulation sum for fourth possible pilot carrier positions of the symbol, and

the block configured to determine comprises:

a block configured to detect the power accumulation maximum magnitude from the first, second, third, and fourth power accumulation sums for indicating the a current scattered pilot raster position.

9. (Previously Presented) An apparatus according to claim 8, wherein the first power accumulation sum is adapted to be calculated based on the following formulae:

$$PS_1(n) = \sum_{p=0}^{p_{\max}} S(n, 12p + 12) \cdot S^*(n, 12p + 12),$$
 wherein $S(n, c)$ denotes c -th subcarrier of the current symbol and p_{\max} depends on the used mode of the transmission.

10. (Previously Presented) An apparatus according to claim 8, wherein the second power accumulation sum is adapted to be calculated based on the following formulae:

$$PS_2(n) = \sum_{p=0}^{p_{\max}} S(n, 12p + 3) \cdot S^*(n, 12p + 3),$$
 wherein $S(n, c)$ denotes c -th subcarrier of the current symbol and p_{\max} depends on the used mode of the transmission.

11. (Previously Presented) An apparatus according to claim 8, wherein the third power accumulation sum is adapted to be calculated based on the following formulae:

$PS_3(n) = \sum_{p=0}^{p_{\max}} S(n, 12p+6) \cdot S^*(n, 12p+6)$, wherein $S(n, c)$ denotes c -th subcarrier of the current symbol and p_{\max} depends on the used mode of the transmission.

12. (Previously Presented) An apparatus according to claim 8, wherein the fourth power accumulation sum is adapted to be calculated based on the following formulae:

$PS_4(n) = \sum_{p=0}^{p_{\max}} S(n, 12p+9) \cdot S^*(n, 12p+9)$, wherein $S(n, c)$ denotes c -th subcarrier of the current symbol and p_{\max} depends on the used mode of the transmission.

13. (Previously Presented) An apparatus according to claim 8, wherein the first power accumulation sum is adapted to be calculated based on the following formulae:

$PS_1'(n) = \sum_{p=0}^{p_{\max}} S(n, 12p) \cdot S^*(n, 12p)$, wherein $S(n, c)$ denotes c -th subcarrier of the current symbol and p_{\max} depends on the used mode of the transmission.

14. (Currently Amended) An apparatus according to claim 8, wherein in the block configured to detect the power accumulation maximum magnitude is adapted to be based on the following formulae:

$PS_{\max}(n) = \max\{PS_p(n)\}_{p \in \{1,2,3,4\}}$, wherein $PS_p(n)$ denotes the first, second, third, and fourth power accumulation sums, p is adapted to determine pilot carrier positions for identifying a certain symbol, and

the a current scattered pilot raster position (SPRP) is adapted to be found based on the following formulae:

$SPRP(n) = \arg \max_p \{PS_p(n)\}_{p \in \{1,2,3,4\}}$, wherein the $PS_p(n)$ denotes the first, second, third, and fourth power accumulation sums, p is adapted to determine pilot carrier positions for identifying a certain symbol.

15. (Previously Presented) An apparatus according to claim 1, wherein the accessor configured to access further comprises:

a block configured to obtain a first symbol of the transmission,

a block configured to obtain another symbol in relation to the first symbol.

16. (Previously Presented) An apparatus according to claim 15, wherein the accessed symbols comprise currently received symbol and certain predetermined another symbol preceding or following the currently received symbol.

17. (Previously Presented) An apparatus according to claim 15, wherein the accessed symbols comprise currently received symbol and certain predetermined another symbol preceding or following the currently received symbol so that the correspondence pattern is adapted to be established between pilot carriers of the symbols for possible carrier positions within the matrix of the symbols.

18. (Previously Presented) An apparatus according to claim 15, wherein the certain predetermined another symbol comprises a consecutive symbol preceding or following the currently received symbol.

19. (Previously Presented) An apparatus according to claim 15, wherein the block configured to establish power accumulation sums further comprises:

- a block configured to establish power accumulation sums for possible pilot carriers of the first symbol, and the apparatus further comprises:

- a block configured to establish another power accumulation sums for possible pilot carriers of the another symbol, and

- a block configured to establish cumulated power sums from the power accumulation sums and the another power accumulated sums,

and the block configured to determine the power accumulation sum maximum comprises:

- a block configured to determine the power accumulation sum maximum of the cumulated power sums for indicating the current pilot carrier position.

20. (Previously Presented) An apparatus according to claim 19, wherein the block configured to establish another power accumulation sums further comprises:

- a block configured to perform a first another power accumulation sum for first possible pilot carrier positions of the another symbol,

- a block configured to perform a second another power accumulation sum for second possible pilot carrier positions of the another symbol,

a block configured to perform a third another power accumulation sum for third possible pilot carrier positions of the another symbol,

a block configured to perform a fourth another power accumulation sum for fourth possible pilot carrier positions of the another symbol.

21. (Previously Presented) An apparatus according to claim 19, wherein for the block configured to establish cumulated power sums from the power accumulation sums and another power accumulation sums, the respective power accumulation sums of the first and the another symbol are adapted to be selected in such a way that the pilot carriers of the symbols have a correspondence for the respective sums.

22. (Previously Presented) An apparatus according to claim 20, wherein the block configured to establish cumulated power sums from the power accumulation sums and the another power accumulated sums comprises:

a block configured to perform a first cumulated power sum for the first power accumulation sum of the first symbol and the fourth another power accumulation sum of the another symbol,

a block configured to perform a second cumulated power sum for the second power accumulation sum of the first symbol and the first another power accumulation sum of the another symbol,

a block configured to perform a third cumulated power sum for the third power accumulation sum of the first symbol and the second another power accumulation sum of the another symbol, and

a block configured to perform a fourth cumulated power sum for the fourth power accumulation sum of the first symbol and the third another power accumulation sum of the another symbol.

23. (Previously Presented) An apparatus according to claim 1, wherein the multi-carrier transmission comprises OFDM transmission using time slicing, the symbol comprises OFDM symbol and the plurality of carriers comprise data carriers and scattered pilot carriers.

24. (Previously Presented) An apparatus according to claim 1, wherein the multi-carrier transmission comprises time slicing based power saving based on bursts, and a synchronization of the apparatus into the bursts is adapted to be based on the indicated pilot position for finding index of the received symbol.

25. (Previously Presented) An apparatus according to claim 1, wherein the multi-carrier transmission comprises DVB transmission using time slicing based on bursts, and synchronization into the bursts is adapted to be based on the indicated pilot position for finding the OFDM symbol.

26. (Previously Presented) An apparatus according to claim 1, wherein the apparatus further comprises:

a Fast Fourier Transform (FFT) block configured to FFT transform the received transmission for obtaining the symbol,

accumulator block configured to accumulating power accumulation sum results, and

Channel Estimation block (CHE) for further continuing the reception of the transmission.

27. (Currently Amended) An apparatus according to claim 1, wherein computational resources for performing the operations of at least one of the ~~means-blocks~~ comprises the a same computational resources which are adapted to perform a post-FFT acquisition in the receiver.

28. (Previously Presented) An apparatus according to claim 1, wherein a buffer of the apparatus is adapted to contain all said blocks.

29. (Previously Presented) A mobile terminal comprising:

a receiver configured to receive a multi-carrier transmission, wherein the multi-carrier transmission comprises various symbols, each symbol comprising a plurality of carriers,

an accessor configured to access at least one symbol which is adapted to establish a distinguishable power based pattern for pilot carriers in the at least one symbol,

a block configured to establish power accumulation sums for possible pilot carriers of the symbol based on the pattern, and

a block configured to determine a power accumulation sum maximum of the sums indicating a pilot carrier position.

30. (Currently Amended) A sub-assembly of a terminal comprising:

a receiver configured to receive a multi-carrier transmission, wherein the multi-carrier transmission comprises various symbols, each symbol comprising a plurality of carriers,

an accessor configured to access at least one symbol which is adapted to establish a distinguishable power based pattern for pilot carriers in the at least one symbol,

a block configured to establish power accumulation sums for possible pilot carriers of the symbol based on the pattern, and

a block configured to determine a power accumulation sum maximum of the sums indicating a pilot carrier position.

31. (Previously Presented) A chipset comprising:

a receiver configured to receive a multi-carrier transmission, wherein the multi-carrier transmission comprises various symbols, each symbol comprising a plurality of carriers,

an accessor configured to access at least one symbol which is adapted to establish a distinguishable power based pattern for pilot carriers in the at least one symbol,

a block configured to establish power accumulation sums for possible pilot carriers of the symbol based on the pattern, and

a block configured to determine a power accumulation sum maximum of the sums indicating a pilot carrier position.

32. (Currently Amended) A method comprising:

receiving a multi-carrier transmission, wherein the multi-carrier transmission comprises various symbols, each symbol comprising a plurality of carriers,

accessing at least one symbol which is adapted to establish a distinguishable power based pattern for pilot carriers in the at least one symbol,

establishing, by a computer, power accumulation sums for possible pilot carriers of the symbol based on the pattern, and

determining a power accumulation sum maximum of the sums indicating a pilot carrier position.

33. (Currently Amended) A ~~computer-readable-medium~~memory ~~comprising storing~~ computer program code that, when executed, causes a computer to perform the method of claim 32.

34. (Cancelled)